

Patent claims

1-37 CANCELED

38. (New) A method for controlling a brake pressure in wheel brakes mounted on a vehicle axle during a braking operation on a road surface having heterogeneous coefficients of friction, the method comprising the steps of
 - determining a low coefficient of friction side and a high coefficient of friction side of the vehicle,
 - forming a stability index representing a driving state of the vehicle,
 - evaluating the stability index on the basis of at least one of the two members of the group consisting of the low coefficient of friction side and the high coefficient of friction side, and
 - modifying the brake pressure in at least one wheel brake as a function of the value of the stability index and as a function of a result of the evaluation of the stability index.
39. (New) The method according to claim 38, comprising the steps of
 - employing an ABS control method for a wheel on the low coefficient of friction side and
 - determining a brake pressure difference between the wheel brake on the high coefficient of friction side and the wheel brake on the low coefficient of friction side, wherein the wheel brakes are preferably mounted on one vehicle axle.
40. (New) The method according to claim 38, wherein the stability index is determined on the basis of a deviation between an instantaneous yaw rate of the vehicle and a reference yaw rate determined in a vehicle model on the basis of a steering angle prevailing at the start of the braking operation.
41. (New) The method according to claim 40, wherein the stability index is formed as a function of a deviation between a yaw rate of the vehicle and a nominal yaw rate determined in a vehicle model on the basis of at least one parameter preselected by the operator of the vehicle.

42. (New) The method according to claim 38, wherein the stability index is formed on the basis of a deviation between an instantaneous steering angle and a steering angle prevailing at the start of a braking operating on a road surface having a heterogeneous coefficient of friction.
43. (New) The method according to claim 42, wherein the stability index is determined as the function of a deviation between a steering angle commanded by the operator of the vehicle and a nominal steering angle set on the steerable wheels of the vehicle.
44. (New) The method according to claim 43, wherein the nominal angle steering angle contains a control component which is determined in a vehicle model as a function of an interfering yaw torque in a vehicle model.
45. (New) The method according to claim 43, wherein the nominal steering angle contains a control component which is determined as a function of the yaw rate deviation between a yaw rate of the vehicle and a reference yaw rate of the vehicle.
46. (New) The method according to claim 38, wherein the stability index is determined as a function of a lateral acceleration of the vehicle.
47. (New) The method according to claim 38, wherein the stability index is determined as a function of a sideslip angle or a sideslip angle velocity.
48. (New) The method according to claim 38, wherein a plus or minus sign of the stability index is determined as a function of the low coefficient of friction side or as a function of the high coefficient of friction side.
49. (New) The method according to claim 38, wherein the brake pressure is modified as a function of the result of a comparison of the stability index with at least one threshold value.
50. (New) The method according to claim 38, wherein the brake pressure in the wheel brake on the high coefficient of friction side is increased in

comparison with the brake pressure in the wheel brake on the low coefficient of friction side when the stability index exceeds a predetermined threshold value.

51. (New) The method according to claim 50, wherein the brake pressure difference between the brake pressure in the wheel brake on the low coefficient of friction side and the brake pressure in the wheel brake on the high coefficient of friction side is limited.
52. (New) The method according to claim 51, wherein the brake pressure difference is limited as a function of the speed of the vehicle.
53. (New) The method according to claim 51 for a vehicle with a front axle and a rear axle, wherein a brake pressure difference on the rear axle is limited to a predetermined component of a brake pressure difference on the front axle.
54. (New) The method according to claim 51 for a vehicle with a front axle and a rear axle, wherein the brake pressure ratio of the wheel brakes on the rear axle is limited to a predetermined component of the brake pressure ratio of the wheel brakes on the front axle.
55. (New) The method according to claim 38, wherein no brake pressure difference is allowed between two wheels on an axle when at least one of the sides of high coefficient of friction and low coefficient of friction changes.
56. (New) The method according to claim 38, wherein a change in the brake pressure is performed when it is detected that the vehicle is driving straight ahead.
57. (New) The method according to claim 38 for a vehicle with a front axle and a rear axle, each equipped with two wheel brakes, wherein during turning a pressure increase is performed more slowly than a pressure decrease, and at least one of the two members of the group consisting of the brake

pressure difference and the brake pressure ratio of the rear axle wheel brakes is limited in a more restrictive manner than when the vehicle is driving straight ahead.

58. (New) The method according to claim 57, wherein turning is determined by means of a turn index obtained from a yaw rate, a steering angle and a lateral acceleration.